# CLINICAL AND ETIOPATHOLOGICAL STUDY ON PITYRIASIS ROSEA

*Dissertation submitted to*

**THE TAMIL NADU Dr.M.G.R. MEDICAL UNIVERSITY**

*In partial fulfilment for the award of the degree of*

**M.D (Dermatology, Venereology and Leprosy)**
**Branch XIIA**

**MADRAS MEDICAL COLLEGE**
**CHENNAI.**

**March 2009**

# CERTIFICATE

This is to certify that this dissertation entitled **" CLINICAL AND ETIOPATHOLOGICAL STUDY ON PITYRIASIS ROSEA "**is a bonafide work done by **DR.S.CYNTHIA,** Post Graduate in M.D. Dermatology, Venereology and Leprosy, Madras Medical College, Chennai- 600 003, during the academic year 2006-2008. This work has not been formed previously the basis for the award of any degree.

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# DECLARATION

I, **DR.S.CYNTHIA**, solemnly declare that this dissertation titled **" CLINICAL AND ETIOPATHOLOGICAL STUDY ON PITYRIASIS ROSEA"** is a bonafide work done by me at Madras Medical College during 2006-2008 under the guidance and supervision of Prof. Dr. B.Parveen, M.D., D.D., Professor and Head, Department of Dermatology, Madras Medical College, Chennai-600 003.

This dissertation is submitted to The Tamilnadu Dr. M.G.R Medical University, towards partial fulfillment of requirement for the award of M.D. Degree in Dermatology, Venereology and Leprosy (Branch XII A).

Place: Chennai.

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# SPECIAL ACKNOWLEDGEMENT

My sincere thanks to Prof. Dr.T.P. Kalaniti, M.D., DEAN, Madras Medical College, for allowing me to do this dissertation and utilize the institutional facilities.

# ACKNOWLEDGEMENT

I am gratefully indebted to Prof.Dr.B.Parveen M.D., D.D., Professor and Head, Department of Dermatology and Leprosy for her invaluable guidance, motivation and help throughout the study. I would like to express my sincere and heartful gratitude to Prof.Dr.N.Kumar, M.D., D.V., DMRD., Additional Professor, Institute of Venereology.

I wish to thank Prof.Dr.V.S.Dorairaj, M.D., D.V., Former Director, Institute of Venereology for his constant support and motivation.

I express my gratefulness to Prof.Dr.D.Prabhavathy,M.D.,D.D., Professor and Head of Department of Occupational Dermatology and Contact Dermatitis for her constant motivation and guidance. I thank Prof,Dr.V.Somasundaram M.D.,D.D., Additional Professor, Department of Occupational Dermatology and Contact Dermatitis for his benevolent help and support.

I am very grateful to Prof.Dr.S.Jayakumar M.D.,D.D., Additional Professor, Department of Dermatology for his invaluable guidance and help. I sincerely thank Prof.Dr.C.Janaki,M.D.,D.D., Additional Professor, Department of Dermatology (Mycology) for her priceless support.

I express my sincere gratitude to Prof.Dr.Jeyakumari Jeevan,M.D,D.D., Professor of Leprosy and Dr.R.Arunadevi,M.D.,D.D., Reader, Department of Dermatology for their support.

I incline to thank Dr.V.Anandan,M.D(Derm);D.C.H; D.N.B., Dr.G.K.Tharini,M.D., Dr.N.Hema,M.D(D.V.L)., Dr.Samuel Jayavel Daniel,M.D(D.V.L)., Dr.S.Anupama, D.D.V.L, Assistant Professors, Department of Dermatology for their kind support and encouragement.

I thank Dr.Hameedulla,M.D.,D.D., Dr.S.Kumaravel,M.D.,D.D., Dr.J.Manjula,M.D.,D.N.B., and Dr.Afthab Jamila Wahab,M.D.,D.D., Assistant Professors, Department of Occupational Dermatology and Contact Dermatitis for their support and help.

My sincere thanks to Dr.V.Thirunavukkarasu,M.D.,D.V., Dr.K.Venkateswaran,M.D.,D.V., Dr.S.Thilagavathy,M.D.,D.V., Dr.P.Mohan,M.D.,D.V., Dr.S.Arunkumar,M.D., .S.Kalaivani,M.D.,D.V., Dr.S.Prabhakar,M.D(D.V.L)., Dr.V.N.S.Ahamed sheriff,M.D(D.V.L)., Assistant Professors, Institute of Venereology for their help and suggestions.

I am also thankful to Dr.R.Priyavathani,M.D., for her continuing guidance and support.

# CONTENTS

# INTRODUCTION

Pityriasis Rosea (PR) is a common dermatoses seen in dermatology out- patients department. It is an acute, self- limiting papulosquamous disorder with a distinctive and constant course. Ever since, it was first described, the interest in this disease was centred mainly on its varied morphology and obscure aetiology.

The literature of the past two centuries records description of disorders apparently identical to the condition now known as Pityriasis Rosea. The disease has been given many names, such as Erythema annulatum (Rayer), Herpes tonsurans maculosus et squamosus (Hebra),Lichen annulatus sperpiginosus (Wilson),Pityriasis circine (Horand),Pityriasis dissemine (Hardy),Pityriasis marginee et circinee (Vidal),Pityriasis rubra aigu dissemine (Bazin), Pseudoxantheme erythemato desquamatif (Besnier),Roseola annulata (Willan), Roseola furfuracea herpetiformis (Behrend) and Roseola squamosa (Nicolas and chapard).

Pityriasis Rosea has been reported in all races, with varying incidence between 0.3 and 3 percent. It is more common between 10 and 35 years of age, with equal sex distribution or a slight female preponderance. The disease is more common during autumn and winter with a decreased incidence in summer. It has been reported to occur among persons in the same intimate environment; a higher incidence also noted among dermatologists.

Experiments by various workers to determine the cause of the disease have been unsuccessful. Fungus, bacteria, spirochetes, drugs, contact with new garments, psychogenic and neurogenic factors were all implicated in the causation of the disease.

Currently a virus is believed to play a pathogenic role. The prodromal illness, generalised exanthem accompanied by constitutional reactions, spontaneous resolution and life long immunity, all point towards a viral cause. Extensive research has been carried out in patients with PR with respect to the newly identified Human Herpes Virus 6 and 7. The results from different studies however are found contradictory. It is thus possible and remains an unproved fact that HHV-6 and 7 may play a role extensively in some patients with PR.

In its classical form, PR is a distinctive dermatoses which is readily identified clinically. The initial lesion is a herald patch or primary plaque that is followed after one or two weeks by a generalised secondary rash with a typical distribution parallel to the lines of cleavage of the skin, resembling a “Christmas tree”. The various morphological types observed are macular, papular, maculopapular, lichenoid, vesicular, pustular, purpuric, urticarial and Erythema Multiforme (EMF) like lesions. Though the lesions can occur anywhere on the skin it is rarely seen over the scalp, palms and soles. After a limited course of six to eight weeks the lesions resolve leaving a residual hypo or hyper pigmentation without any complications.

# REVIEW OF LITERATURE

## DEFINITION

Pityriasis Rosea (PR) of Gibert is defined as an acute, self-limiting disease, probably infective in origin, affecting mainly children and young adults, and characterised by a distinctive skin eruption and minimal constitutional symptoms[3] or a self-limiting disorder characterised by the development of asymptomatic erythematous scaly macules on the trunk. *Pityriasis* means fine scales; *rosea* denotes rose coloured or pink.

Pityriasis Rosea is a clinical diagnosis. The typical form is relatively well defined and easily recognised. However, variant or atypical forms including atypical morphology and atypical distribution are fairly common, and even a trained eye may find it difficult to differentiate these atypical forms of PR [4].

## HISTORICAL BACKGROUND

### Robert Willan and description of the eruption before 1860

The term *pityriasis* was first coined by the great Greek physician Claudius Galen (AD129 - 216) to describe dandruff [5].Robert Willan (1757-1812), an Edinburgh graduate, was regarded by many as the father of modern dermatology. He devised the first modern classification of skin diseases.

Willan described a rash which he termed as *roseola annulata* in

1798. Pierre François Olive Rayer (1793-1867), a French dermatologist, described a very similar rash and termed it as *erythema annulatum* in 1828[5]. Erasmus Wilson (1809-1884), the first professor of dermatology at London University, wrote about *lichen annulatus serpinginosus* in 1857. He described the lesion as *small, flat, erythematous discs, bounded by a sharp and distinct margin… and converted into rings* [6].These rashes were named as *pityriasis rosea* later [6].

**Camille Melchoir Gibert and pityriasis rosea**

The term *pityriasis rosea* was introduced by Camille Melchoir Gibert [5,7,8,9]. He was given the credit for the first accurate description of the rash of PR.Also, he was the first to report that PR is subject to recurrences and that PR was not caused fungus [5].

**Pierre-Antoine-Ernest Bazin and annular pityriasis rosea**

Pierre-Antoine-Ernest Bazin (1807-1878) in 1862 described the annular type of PR and he was the first to report prodromal malaise in PR [5,10].

**Pityriasis circinata et marginata of Vidal and other synonyms**

Jean Baptiste Emile Vidal, another French dermatologist, described a similar condition which he termed as *pityriasis circiné et marginé.* He thought that PR and *pityriasis circiné et marginé* were different conditions as the latter runs a longer course [5].

Some dermatologists consider *pityriasis circinata et marginata of Vidal* as a special form of PR, with fewer and larger lesions often localised at the axillae or groins [10,11]. Other dermatologists are of the opinion that *pityriasis circinata* and *pityriasis circinata et marginata* should be synonyms of PR [5]. Other synonyms of PR are of historical interests only, and include *herpes tonsurans maculosus*, *pityriasis disséminé*, *pityriasis rubra aigu*, *roseole squameuse of Chapard* and *pityriasis maculate et circinata of Bazin*.

**First descriptions of herald patch and peripheral scaling**

Louis-Anne-Jean Brocq (1856-1928) was the first to describe *plaque primitive* or *primitive patch* as a distinctive diagnostic sign of PR in 1887, 27 years after Gibert's description of PR [6].

In 1899, Alfred Blaschko (1858-1922), a German dermatologist, famous for his description of *Blaschko's lines* [12], pointed out that *in PR there is exfoliation from the centre to the periphery, while in psoriasis desquamation takes place from the periphery to the centre* [6].

**Modern nomenclature and classification**

*Pityriasis rosea* was coded 696.3 in the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM). It was listed under 696, *Psoriasis and similar disorders*. *Pityriasis circinata (et maculata)* was listed as a synonym of PR under code 696.3. There was no

entry for *pityriasis rosea due to drug*.

In ICD-10, *pityriasis rosea* is coded L42X00[100]. *Pityriasis rosea due to drug* is coded L44X01, signifying that PR-like rash related to drugs is now considered a distinct condition. *Gibert's disease*, *pityriasis circinata* and *pityriasis circinata et marginata of Vidal* are all also coded L42X00, denoting that they are synonyms of PR. The atypical forms of PR are not formally listed in the classification system.

## EPIDEMIOLOGY

PR is quite universal. All races are equally susceptible to PR [11].The symptomatology of PR is also similar in all races. African patients tend to have more extensive rash and involvements of the face and scalp have been reported to be more frequent than Caucasians [11, 13]. It was reported that an erythematous or *rosea* picture is seldom seen in black patients[14]. Asian patients tend to have similar rash morphology and extent of involvement as Caucasian patients.

### Incidence and prevalence

Overall incidence is 0.3 to 3 %( app: 2%) of dermatological outpatient visits.Traore A *et al* in his cross sectional study calculated the prevalence of PR to be 0.6% [21].

There is a slightly increased prevalence in patients with decreased immunity such as bone marrow transplant recipients [94].

**Age and sex distribution**

PR affects all ages from infants to the elderly [15]. Most patients are between the years of ten and 35 [4]. The youngest reported patient was three months old [16]. The oldest reported patient was 83 years old [4].

Camille Melchoir Gibert stated that females are affected more often than males [17]. Many studies have reported a slight female preponderance, the most frequently reported male: female ratio being 1: 1.2 to 1: 1.5. [13,11,18,9,14,19,20,21].The reason for the apparent female predominance is unknown.

**Seasonal Variation**

The data on seasonal variation in PR have been conflicting [22].
In temperate zone, it's more common during winter. In tropical regions PR has been found to be more common during hot and dry season[9, 22, 95].

**Case clustering**

Significant temporal clustering independent of seasonal variation occurred in a series of patients with PR. This may be indicative of an infectious cause [33].

## AETIOLOGY

The evidence to support an infectious aetiology for PR is its distinct clinical course. There is a primary skin lesion followed by a secondary eruption, with complete remission mostly within eight weeks. This course of the disease is similar to most of the viral infections. Moreover, many patient do not have a second attack, a phenomenon which is commonly seen in many viral diseases[2,23].

Most experiments at transmitting PR to human beings have failed. But, Wile UJ in his study has shown that PR can be transferred using blister fluid or extract of scales of PR patients. He also showed that bacterial cultures from the scales were negative[24].

An electron microscopic study on lesional biopsy of the herald patch reported virus-like spherical particles with size of 70nm in the intercellular spaces and the cytoplasm of Langerhans cells[27]. Virus-like particles in the dyskeratotic keratinocytes were also reported another study [28].

Apart from human beings PR like eruption has also been reported in pigs which is known as porcine *juvenile pustular psoriasiform dermatitis*. PR in pigs occurs sporadically, usually affecting piglets between 8 to 12 weeks. Erythematous annular plaques with distinct borders and bran-like scales are seen. Spontaneous resolution occurs in six to eight weeks. Several piglets in the same litter may be affected concurrently, supporting a viral aetiology [29].

## 1. Evidence supporting an infectious aetiology

### a) Concurrent cases

Literature review has retrieved no report of any true epidemic for PR. However, since the first descriptions of this condition, there have been many case reports of two or more patients with PR in the same family or intimate environment [30].

### b) Associations

Epidemiological studies reported associations of PR with prodromal history of respiratory tract infections [31], unfavourable social and economic background [21], and contact with patients with PR [32].

An interesting study compared the incidence of PR of dermatologists and otolaryngologists. It showed higher incidence of PR in dermatologists when compared to otolaryngologists, claiming that frequent exposure to PR by dermatologist during their practice led to an increased risk [32].

**c) Case clustering**

Cluster analysis is an epidemiologic approach to investigate a possible infectious cause. Significant temporal clustering independent of seasonal variation occurred in a series of patients with PR. This may be indicative of an infectious cause [33].

**d) Immunology**

Immunohistologic data shows perivascular aggregates of predominantly active CD4 T –helper cells in the superficial dermis. There is also an increase in Langerhan cells, which is an antigen presenting cell suggesting an infectious aetiology for PR [1,85].

**e) Human Herpes virus (HHV) 6 and human Herpes virus 7**

Herpes virus like particles has been found in 71% of PR lesions. HHV6 and HHV7 have been suggested as the cause for the eruption. The viral DNA is reported to be present in peripheral blood mononuclear cells

in the lesional and unaffected skin of majority (80-100%) of individuals with acute PR. HHV7 is detected slightly more frequently than HHV6, but often both viruses are found. However, its role as a causative agent is yet to be proved[34, 35, 93,98].

**f) CMV, EBV and Parvovirus**

Most recent studies have proved that there is no association between PR and these viruses [36].

**g) Influenza and Parainfluenza viruses**

One study analysed whether PR is due to Influenza and Parainfluenza viruses as many patients gave a history of antecedent upper respiratory illness, but the investigators concluded that PR is not related to these viral infections because there was no significant rise of antibody for these viruses [37].

**h) Picornovirus**

Earlier work has demonstrated Picornovirus like intra nuclear inclusion bodies in the tissue of African Green Monkey, inoculated with fluid from PR lesions; however other attempts failed to demonstrate this virus genome [38] .

**i) Enterovirus**

Enteroviruses tend to produce a variety of exanthem. A case has been reported with PR like skin eruption with a typical Christmas tree pattern and the demonstration of a monoclonal antibody that identified enteroviruses, suggests that an unusual enterovirus could be the possible cause of the rash [39].

**j) Legionella ,Chlamydia and Mycoplasma**

There is as yet no definite evidence whether *L. micdadei* , *L. pneumophila, L.longbeachae, C.pneumoniae,C.trachomatis and M.pneumoniae* infections are associated with PR or not [40].

**2. Autoimmunity**

An autoimmune element in the pathogenesis of PR has been suspected by some investigators [41]. They proposed that PR is an autoaggressive disease affecting a small, genetically susceptible subset of the population. They believed that an infectious agent may be the trigger factor in the pathogenesis.

It has been reported that 28% of patients with PR have T

lymphocytotoxic Ab, an autoantibody present in 82% of patients with systemic lupus erythematosus (SLE) [42]. PR has also been reported to occur in a patient with Behçet's disease. Whether the PR eruption is related to the disease process, the interferon treatment or is totally coincidental is unknown[43].

The use of systemic corticosteroids for recalcitrant PR has been advocated [2]. 20 cases with extensive inflamed eczematised PR were reported to have been treated with systemic steroids. In this study the authors used a short tailing course of oral prednisolone over two to three weeks. Improvement was noted in all 20 patients which may support the hypothesis that PR may be an autoimmune disease, but it was not known that, whether such improvement was related to the systemic corticosteroids *per se* or due to spontaneous remission[44].

Erythromycin has been reported to have remarkable effects in modifying the course of PR [45]. Apart from its effects as an antibiotic, erythromycin also has anti-inflammatory and immunomodulatary effects. In the case of autoimmunity or immune dysfunction being an important component in the pathogenesis of PR, these effects may also contribute towards the action of erythromycin in PR[46].

### 3. Atopy and genetic predisposition

In a case control study, patients with PR and their relatives were reported to have a higher incidence of asthma and eczema. Such findings support genetic predisposition being an underlying factor in PR, and that an infectious agent may be the trigger factor, but this fact is yet to be proved [41,47,96].

### 4. Other factors

a) **Pschychogenic aetiology:** has also been proposed in highly stressed individuals. Though the pschyco somatic theory is considered to be unlikely, it may the depressant effect of stress on the immune system that makes these individuals more susceptible to PR[47].

b) **New Clothing:** Because, the distribution of the skin lesion in PR sometimes coincides with the location of various garments of the body, it has been thought that these may precipitate or affect the course of the disease[96]**.**

c) **Pregnancy:** The slightly increased prevalence of PR in pregnant women is possibly due to new clothing, but this fact has not been confirmed[96].

d) **Bone Marrow transplantation, Administratin of BCG/ Hep B/ Pneumovac, Insect Bite , Wasp sting** have all been implicated in the causation of the disease , but none has been proved [94,95,97] .

# CLINICAL FEATURES AND DIAGNOSIS

## Classic pityriasis rosea

The characteristic features of a Classical pityriasis rosea are as follows

**Herald Patch (Syn: Mothers patch, Primary Plaque or Plaque Primitive , Primary Medallion)**

The herald patch is the first lesion to appear in a PR patient. It is a solitary round or oval lesion with a central wrinkled salmon coloured area and a darker red peripheral zone separated by a collarette of fine scaling. It may vary from 1-10 cm in diameter. The herald patch may occur anywhere on the body, although the trunk and upper arms are its predilected sites i.e. in the areas covered by clothes[2].

The herald patch is seen in 80% of all PR patients [47].In another study,

where a series of 127 patients were examined, 76 % were reported to have a herald patch[48]. However, its true incidence is difficult to be ascertained as it is easily missed by the patients.

The Herald Patch may be absent or there may be two or more patches. Herald patch sometimes develops at the site of recent lesion such as minor cutaneous infection, flea bite, wasp sting, and BCG or Hepatitis B vaccination[2,95]. The onset of Herald Patch may be preceded by general malaise , nausea ,loss of appetite ,fever ,joint pain and lympadenopathy[96].

**Secondary eruption**

The herald patch is followed by the secondary eruption. The range of the interval between primary and secondary eruptions can be as wide as 2 days to 2 months, but is predominantly around 5 to 15 days. Two main types of lesions are seen, one is the lesion of similar morphology as the herald patch, but smaller in size, and the other is small, red, non scaling papules. Both the forms can exist concomitantly. Old lesions usually fade in two weeks but new lesions will continue to appear in crops at 2-3 days interval over a week or 10 days[2,95].

**Collarette scaling**

The word *pityriasis* comes from the Greek meaning *bran* [49]. In PR, it describes the fine desquamation of the lesions. *Collarette* means *collar-like*. This term denotes two characteristics of the peripheral scaling pattern in PR. Firstly; the scaling is circinate or oval. Secondly, the

morphology of scaling is such that fine fragments of scales are attached only at the periphery, reflecting a tendency of peeling from the centre towards the edge. The whole lesion can also be covered with a fine scale initially, then desquamating to leave collarette scaling around each lesion. The amount of scales present is highly variable[49].When stretched across the long axis the scales tend to fold across the lines of stretch which is called as the "Hanging Curtain" sign [101].

Collarette scaling is important for the diagnosis for PR. However, its recognition is sometimes difficult.

**Truncal distribution**

In classical cases, only the trunk and proximal aspects of the extremities are involved. This distribution pattern is traditionally termed as *T-shirt-and-shorts*, *high-necked short sleeved vest* or *bathing suit* pattern[48]. However, it has been reported that lesions can be distal to the elbow in 4.8% of cases, and distal to the knees or the elbows in 15.3% of cases [17].

The distal involvement is commonly seen in older patients[17]. The face is usually spared, although sometimes a few patches may spread to the cheeks. Palms and soles are spared in most cases[17]. This fact is usually

taken as one of the differentiating features from secondary syphilis. However, palmoplantar involvement in PR showing lesions similar to secondary eruptions elsewhere in the body was reported by Klauder JV as early as 1924[10].

**Symmetry**

The secondary rash in Classic Pityriasis Rosea is very symmetrical[4,50.95].

**Orientation**

On the anterior and posterior aspect of trunk the characteristic orientation of the secondary eruptions has been described in various terms as *Christmas-tree pattern*, *inverted Christmas-tree pattern*, *fir tree pattern*, *parallel to the ribs* or *along the skin cleavage lines*,that is, on the anterior trunk, the rash seems to be radiating medially and inferiorly, while on the posterior trunk, the rash seems to be radiating laterally and inferiorly. This orientation along the skin cleavage line is most characteristic at the anterior and posterior axillary folds and supraclavicular areas. However the underlying mechanism for this orientation pattern is unknown[6,92].

**Pruritus**

Pruritus in PR may vary from no pruritus at all to severe pruritus . Pruritus is severe in 25% of patients; mild to moderate in 50% and absent in 25% of patients. When PR is irritated, itching is usually prominent[51,96].The nature of pruritus in PR has not been specifically reported in the literature.

**Spontaneous remission**

The duration of the rash varies from 2 to 12 weeks, but may last for as long as five months which is known as PR perstans[53]. Post-inflammatory hyper or hypopigmentation may also last for months, but usually the lesion vanishes without trace [4]. PR has been termed as *Doctor's Delight, owing* to spontaneous remission with no complication [48].

**Relapse**

The incidence of relapse is very low, only about 2-3 % of patients will have a relapse. In a series of 826 patients, the rate of relapse was noted as 2.8% [47]. The eruption is usually less severe in relapse [47].

## Atypical pityriasis rosea

Atypical forms of PR are fairly common. An epidemiological study estimated that up to 39% of patients with PR may have some atypical features. Atypical features include atypical rash morphology, rash size, rash distribution and site of the lesions [21, 54].

### Atypical morphology of lesions

Atypical rash morphology includes vesicular, purpuric or haemorrhagic, urticarial, Lichenoid and EMF -like forms [57].

Vesicular PR usually presents as a generalised eruption of 2-6 mm vesicles. Palms and Soles can be involved, but like the classic PR, the face and scalp are usually spared. Vesicular PR is said to be commoner in children and young adults and is more commonly seen in Africa [55,56]. Vesicular PR may exist alone or may be concomitantly seen with classic oval scaly PR patches [57]. Vesicular PR may be severely pruritic and extensive [61].The lesions may simulate a wide spread eczematous eruption with weeping and crusting. In a series of 138 patients with PR, four patients were reported to have vesicular PR [11]. It is believed that the vesicular lesions are due to exaggerated spongiosis and exocytosis with intraepidermal separation [58].

Purpuric PR usually presents with tiny purpuric spots affecting the trunk and proximal part of the extremities. Accompanying petechiae may be visible over the palate. The histopathology is usually the same as for classic PR. Some lesions may reveal mild to moderate extravasation of erythrocytes in the papillary dermis, associated with dilatation of capillaries. Histopathological evidence of accompanying allergic vasculitis is usually absent. The prognosis is the same as for classic PR. It is likely that *haemorrhagic* and *purpuric* PR are different terminologies describing the same condition [58, 59, 60].

Urticarial PR, also known as *pityriasis rosea urticata*, present with considerably raised lesions resembling urticarial wheals. It is often accompanied by intense pruritus [10].

**Atypical size of lesions**

*Pityriasis rosea gigantea of Darier* is rare characterised by large sized plaques which can have sizes up to the patient's own palm. In one patient, the herald patch was of the size and the shape of a pear over the right scapular region [62]. The secondary lesions were of sizes about 5cm by 6.3cm [62]. The clinical course of pityriasis rosea gigantea of Darier is similar to classic PR [10].

Papular PR is the other extreme in the size of PR lesions [63]. It is more often seen in children. The primary eruption consists of a coalescence of papules which represents the herald patch. The secondary eruption, numerous small papules 1-2 mm in diameter may be seen together with the classical oval PR patches[10].

**Atypical distribution of lesions**

Cases with relatively asymmetrical rash distribution are uncommon but not rare. Atypical distribution of lesions is frequently in the form of acrally distributed rash, also known as *PR inversus* [64,65]. The face, axillae and groin are predominantly affected. In the *limb-girdle* type, the eruption is restricted to the shoulders or the hips [22].Even cases with strictly unilateral involvement have been reported [66].

In localised PR the lesions are confined to one part of the body. The trunk is usually the predilected site. The rash morphology and time course of localised PR are the same as for classic PR [67].

*Pityriasis circinata et marginata* is sometimes considered as a special or atypical form of PR [10,11]. This is mainly seen in adults, with fewer and larger lesions often localised to the axillae or inguinal region. Pityriasis circinata et marginata usually persists for a longer period than

classical PR, and sometimes precedes a typical generalised PR rash. In a series of 138 patients with PR, four patients were reported to have pityriasis circinata et marginata of Vidal [11].

**Atypical site of lesions**

It has been reported that involvements of the face, scalp, hands and feet are uncommon but not rare in PR [10]. The scalp, eyelids and penis can also be involved in PR [10].Two cases of PR with palmoplantar plaque lesions have been reported [68].Atypical lesions on the patients feet and wrist may occur, because of their respective environments which are prone to sweating and irritation (lesion under the watch band; socks and shoes on the feet).This variant is known as *Pityriasis Rosea Irritata,* which may resemble guttate psoriasis [49].

The oral cavity is another atypical site for PR lesions [69]. Oral lesions may occur in discrete or confluent patches. They may be white, haemorrhagic, erosive, or bullous. Two major types of oral involvement were described: tiny punctate haemorrhages with pinhead erosions over the buccal and palatal mucosa, and discrete, slightly elevated lesions sometimes with superficial erosions can ba seen [11]. Intraoral lesions are usually asymptomatic. They either follow a similar course as cutaneous PR lesions, or tend to subside several days before the cutaneous eruption

[11].Rarely, vulva can also be involved[95].

## Drug induced pityriasis rosea-like rashes

Many drugs including captopril [70], gold, isotretinoin, lithium [100],non-steroidal anti-inflammatory agents [52], omeprazole [71], terbinafine [72], and tyrosine kinase inhibitor [73,74] have been implicated in causing PR-like rashes. P*ityriasis Rosea due to drug* is now considered as a separate condition distinct from PR in ICD-10.

It was reported that when ampicillin was consumed by 29 patients with PR, the lesions got worse and urticated [19]. The face was frequently involved and pruritus was also more frequent. This phenomenon was analogous to ampicillin rash in infectious mononucleosis. It is also reported that this intolerance to ampicillin was not seen with other antibiotics such as erythromycin or co-trimoxazole [19].

**Characteristics of Drug induced PR**

The lesions in a Drug induced PR are generally less numerous, larger and more scaly than usual. The Herald Patch and the Christmas tree distribution are frequently absent. In addition, associated oral lesions,

persistence of lesions, striking resistant to therapy, post inflammatory hyper pigmentation and transformation to lichenoid dermatitis are more common [96].

| Drugs associated with a PR like eruption | |
|---|---|
| Barbiturate | Isotretinoin |
| Bismuth | Interferon α |
| Captopril | Ketotifen |
| Clonidine | Lithium |
| Diptheria Toxoid | Levamisole |
| D-Penicillamine | Metronidazole |
| Gold | Methopromazine |
| HydroxyChloroquine | Omeprazole |
| Imatinib mesylate (Gleevac) | Terbinafine |

## PR and Related Physical Conditions

In rare cases enanthema may occur with haemorrhagic macules and patches, bullae on the tongue and cheeks or lesions that resemble aphthous ulcer[99].

Pitting of Nails and onychodystrophy after PR has also been reported[75].Lymphadenopathy may occur in patients in PR, especially early in the course of the disease and in association with flu like symptom[99].

Other associated skin diseases more commonly found along with PR are atopy and seborrheic dermatitis and acne vulgaris[96].

**Systemic Involvement**

Involvements of internal organs have not been documented [76].

**Complication**

No complications have been reported except for flu like symptom[99].

## Differential diagnoses

1. ***For Christmas Tree Eruptions:*** The following conditions also have Christmas tree distribution of lesion and should be differentiated from PR.

- *Erythema dyschromicum perstans(Ashy Dermatosis)*: In ashy dermatosis slight erythema precedes the characteristic bluish brown patches following the clefts of the skin. The colour also differs from the pigmentation that follows PR and also fades faster. Histopathology shows hydropic degeneration of the basal cell layer of epidermis which is different from that of PR[96].
- *Lichen planus and lichenoid reactions*: These are often caused by drugs and have a PR distribution. The lesions have the characteristic of both PR and Lichen planus on naked eye examination and also on microscopy[96].
- *Pityriasis lichenoides et varioliformis acuta or chronica*: These lesions also follow lines of cleavage of the skin and may present with a "Christmas Tree" pattern on the trunk, but as a rule, typical lesion will be found on the extremities. Histologically also, it mimics PR [96,77] .
- *Kaposi's sarcoma*: may present with a PR like distribution pattern with oval, violaceous papules and nodules chiefly on the arms,

neck and trunk[96].

2. ***For Annular eruptions and Herald patch:*** Annular PR and Herald patch should be differentiated from the following conditions.

- *Pityriasis Alba:* It usually occurs in children and young adults over the face, arm and thorax, and when the lesions are irritated an annular erythema develops similar to PR[96].
- *Nummular eczema*: Nummular eczema localised to the trunk can also pose difficulties in diagnosis, but these lesions are usually round, not oval and the papulovesicular elements are more prominent than in PR. also, the duration of the disease is more when compared to PR.
- *Seborrheic dermatitis* : can present as annular or figurate lesion on the trunk and arms,but as a rule the scalp and face show the typical picture of seborrheic dermatitis and the course is protracted[96].
- *Dermatophyte infection:* may mimic PR in acute stages.This can be ruled out by mycologic investigations like scraping for KOH examination or by fungal culture[96].

3. ***For Papular Eruptions:*** When there is no primary plaque, the papular eruptions should be excluded from

- *Drug Eruptions and Erythema Multiforme*[96].
- *Scabies* [65]
- *Guttate Psoriasis:* is very difficult to differentiate from PR when only few lesions are present.Histologically examination is not always helpful. Psoriasis runs a longer course.
- *Secondary Syphilis*: involvement of palms and soles is characteristic of secondary Syphilis, but it is rare in PR.Serologic test for syphilis will differentiate the two.

4. ***Purpuric PR:*** should be differentiated from vasculitis and haematological diseases [4].

5. ***Inverse PR:*** Papular Acrodermatitis of Childhood (Gianotti-Crosti Syndrome) [65,96].

6. ***Other Differential diagnosis:*** Hodgkins disease, Mycosis Fungoides, Gastric Carcinoma and Bronchogenic Carcinoma are associated with PR like eruption[2].

**Diagnostic criteria**

A set of diagnostic criteria has been devised and validated for PR, but its reliability and applicability in other ethnic groups remains to be ascertained[22].

| **Diagnostic criteria of pityriasis rosea** |
|---|
| A patient is diagnosed as having pityriasis rosea if:<br><br>1. On at least one occasion or clinical encounter, he / she has **all** the **essential clinical features** and **at least one** of the **optional clinical features**, and<br>2. On all occasions or clinical encounters related to the rash, he / she do **not** have **any** of the **exclusional clinical features**. |
| **Essential clinical features**:<br>1. Discrete circular or oval lesions<br>2. Scaling on most lesions<br>3. Peripheral collarette scaling with central clearance on at least two lesions |
| **Optional clinical features** (at least one has to be present):<br>1. Truncal and proximal limb distribution, with less than 10% of lesions distal to mid-upper-arm and mid-thigh<br>2. Orientation of most lesions along direction of the ribs<br>3. A herald patch (not necessarily the largest) appearing at least two days before the generalized eruption |
| **Exclusional clinical features**:<br>1. Multiple small vesicles at the centre of two or more lesions<br>2. Most lesions on palmar or plantar skin surfaces<br>3. Clinical or serological evidence of secondary syphilis |

# Investigations

PR is a clinical diagnosis. Lesional histopathological changes are

non-specific. Taking a lesional biopsy thus cannot confirm a diagnosis of PR. The roles of investigations are to exclude important differential diagnoses and to provide additional support for the diagnosis in atypical cases. Histopathological examination was not performed even in a recent clinical trial on PR, as *it seldom helps in diagnosis* according to the investigators [45]. Skin scraping for potassium hydroxide smear and fungal culture may be indicated only if tinea corporis is suspected clinically[96].

It has been suggested that, for adolescents at least, secondary syphilis should be excluded with serology tests for all cases diagnosed with PR, especially when the palms or soles are affected, when a herald patch is not seen, or when morphologic atypia complicates the clinical picture [80].

The blood picture is usually normal, but leukocytosis, neutrophilia, basophilia and lymphocytosis have been reported. Slight increase in erythrocyte sedimentation rate (ESR), total protein, α1 and α2 globulins and albumin also have been observed. Tests for Rheumatoid factor, cold agglutinins and cryoglobulins have been normal but none of these helps in diagnosing PR [81,96].

# PATHOLOGY

## Lesional Pathology

Histopathological changes in PR are non-specific. Lesional biopsy can therefore provide evidence to support the diagnosis and exclude certain important differential diagnoses only, but not to confirm a diagnosis of PR. Histopathological changes in the generalised eruption typically shows a reaction pattern classified as superficial perivascular dermatitis [2, 81.] The epidermal findings include focal parakeratosis; however in rare cases it may be diffuse. The granular cell layer is reduced or absent. Slight acanthosis, focal spongiosis which may progress to vesiculation can be seen. A most impressive sign of PR is the presence of microscopic vesicles, sometimes subcorneal in a clinically dry lesion. In the dermis, a superficial perivascular infiltrate of lymphocyte, histiocytes and occasionally eosinophils may be observed. There is papillary dermal oedema and a variable number of extravasated red cells[85].

Extravasated RBC may be seen not only in the papillae but also in the epidermis. The papillary dermal red cells are particularly prominent in purpuric PR [2, 81].

Histopathological changes in the herald patch are similar to generalised eruption. The Herald patch may have in addition to the histopathological changes described above more pronounced acanthosis,

less of spongiosis and deeper and denser perivascular inflammatory infiltrate and papillary dermal oedema [4,96].

Other histologic features that have been reported include focal necrosis of epidermal cells; dyskeratotic cells in the upper and middle epidermis with an eosinophilic, homogenous appearance, suggesting primary damage to the basal cells; multinucleated epidermal giant cells can be seen as in other inflammatory states. Focal acantholytic dyskeratosis have also been reported[82,83,84].

Histological changes in PR may also closely resemble superficial gyrate erythema, erythema annulare centrifugum, guttate psoriasis, and small plaque parapsoriasis. As small vesicles or micro-abscesses similar to those present in psoriasis are sometimes seen, the histological differentiation of PR from early lesions of guttate psoriasis can be particularly difficult[28]. The distinction of guttate psoriasis from PR should therefore still be made on clinical ground, as illustrated by a recently reported case [49].

An electron microscopy study on lesional biopsy specimens of patients with PR was reported [86]. The investigators found cytolytic changes in keratinocytes adjacent to Langerhans cells, which are the

antigen presenting cells and these findings suggest a cell mediated immune reaction in the epidermis [86].

A study of skin biopsy specimens from patients with PR reported high CD4: CD8 ratio in the dermal T cell infiltrate in active PR lesions. This ratio significantly decreases in old inactive PR lesions[1,87]. This might indicate that PR is also an inflammatory dermatosis similar to psoriasis and that cell mediated immunity may play an important role in the pathogenesis of the disease [87].

## Alterations in the peripheral blood

In the peripheral blood, elevation of the erythrocyte sedimentary rate, a slight decrease in the number of T-lymphocytes and an increase in B-lymphocytes were reported [47]. These changes are similar to those seen during acute viral infections, offering some support for a viral aetiology in PR [47].

The case controlled study reported normal levels of serum IgG and IgA but higher levels of total IgM, decreased C3 and normal C4 in patients with PR.These findings were compatible with a viral aetiology

for PR[88].

## QUALITY OF LIFE AND PR

The QUALITY OF LIFE (QOL) of patients with PR is significantly less affected when compared to patients with atopic dermatitis and acne vulgaris. The effects on the QOL of patients with PR doesn't correlate with rash severity, but rather correlates significantly with the patient's concerns regarding the aetiology and infectivity of the disease[89].

## TREATMENT

a) Since PR is self limited, there is no need for active treatment.
b) Water, Soap, Wool and Sweating may cause irritation and should be avoided in acute stages. New clothing must also be avoided.
c) For patients with mild pruritus zinc oxide or calamine lotion will suffice.
d) For patients with pruritus severe enough to disturb the quality of life, along with topical preparation like zinc oxide or calamine lotion, a course of Erythromycin can be given (Tab. Erythromycin 250 mg QID for 2 weeks; for children 25-40 mg/kg/day in four divided doses for 2 weeks) [45] along with anti histaminics and mid

potency topical corticosteroid for symptomatic relief of pruritus[96].

e) The use of systemic corticosteroids should be restricted to adult patients with exceptionally recalcitrant and symptomatic PR resistant to other treatments.[44]

f) For patients early in the disease course who demonstrated associated flu like symptoms and/or extensive skin diseases, oral Acyclovir 800mg, 5 times daily for 1 week or equivalent Acyclovir derivatives may hasten recovery from disease[52,99].

g) In certain patients phototherapy has been found to be useful. Ultraviolet radiation in erythmogenic doses (a dose large enough to produce erythema and desquamation) is necessary. But, post inflammatory pigmentation at the site of the PR lesion following UV radiation therapy has prompted warning against this form of treatment [90,96].

h) Dapsone has been used in severe vesicular PR[96].

# AIM OF THE STUDY

To study

- the incidence of pityriasis rosea in Government general hospital, Chennai during the period Aug 06 to Aug 08
- age and sex distribution
- the various morphological patterns and distribution of skin lesions in Pityriasis Rosea
- the course, total duration and complication of the disease
- histopathology of skin lesions
- associated skin diseases
- culture of scales from the skin lesion to exclude bacterial aetiology

# MATERIALS AND METHODS

All the patients attending the dermatology out patient department at Government general hospital, Chennai during the period Aug 06 to Aug 08 were screened and patients with pityriasis rosea were enrolled.

The clinical diagnosis of Pityriasis Rosea (PR) was made in each case based on the morphology and distribution of the skin lesions.

Inclusion criteria: patients living at a travellable distance to the hospital, who were willing for follow up and who had not taken any treatment for the present condition.

Exclusion criteria: patients who tested positive for VDRL, ELSIA for HIV and for spores / hyphae in KOH examination of the scales.

Patient's details were recorded including the month and age of onset of symptoms, course of the disease, precipitating and aggravating factors, prodromal illness, constitutional symptoms and healing of the rash. Family history, history of similar disease in the close intimate environment and history of recurrence were also noted.

Findings of clinical examination were recorded including skin

lesion, site, size, shape, colour and distribution of secondary lesions. Based on this, patients were classified as classic or atypical variety of PR.

In all the cases, serological test for Syphilis was carried out and routine investigations like total WBC count, differential count, ESR, Haemoglobulin, serum proteins were done. In patients who had Herald patch, dermatophytosis was excluded by examining the scales in KOH wet preparation. Mantoux test was done in all cases, to find if there was any suppression of immunity, as seen in the other diseases with viral aetiology, since PR is also thought to be caused by virus. Skin biopsy of the lesions were done, and the tissue was fixed in formalin and the sections were stained with haematoxylin and eosin stain.

Culture for bacteria from the scales of lesions in PR was done for 20 cases who had severe disease. At first; the scales were inoculated into BHA Broth (Brain Heart Infusion Agar) which is an enrichment media. It is then transferred to Blood Agar after a day for the evidence of any bacterial growth, which might be associated with PR.

Data thus obtained was complied, tabulated and statistically summarised.

# OBSERVATIONS AND RESULTS

## a) INCIDENCE OF PR

The following data shows the incidence of PR in the Govt. General Hospital, Chennai to be 1.43%.

| Study period | Total no. of PR patients | Total no. of new patients | percentage |
|---|---|---|---|
| Aug 06-Aug 08 | 431 | 30056 | 1.43% |

## b) AGE INCIDENCE

| Age in yrs | Number of cases |
|---|---|
| 0-10 | Nil |
| 11-20 | 36 |
| 21-30 | 44 |
| 31-40 | 16 |
| 41-50 | 03 |
| 51-60 | 01 |

The maximum incidence was in the age group between 11-30 yrs (80%). The youngest patient in the study was 12 years old and the oldest was 52 years old.

## c) SEX INCIDENCE

Out of 100 cases, 68 cases were males (68%) and 32 cases were females (32%), indicating a male preponderance.

| Number of Males | Number of Females |
|---|---|
| 68 | 32 |

## d) SEASONAL INCIDENCE

The following is the monthly attendance of cases of Pityriasis Rosea for the past three years at the Government General Hospital, Chennai.

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 | 23 | 15 | 11 | 08 | 10 | 08 | 14 | 25 | 30 | 30 | 33 | 28 |
| 2007 | 25 | 12 | 10 | 09 | 13 | 03 | 09 | 10 | 14 | 17 | 16 | 19 |
| 2008 | 20 | 17 | 10 | 13 | 10 | 10 | 11 | 10 | - | - | - | - |

The incidence was more in the months from September to February i.e. during the rainy season and winter season. Sporadic cases were seen through-out the year.

## e) FAMILIAL OCCURRENCE

Although specific history was taken for evidence of similar disease in the other members of the family, the result was an emphatic denial by most of the individuals under study, except for one patient, whose mother had similar illness. There was also no clustering of PR cases in any localised part of the city.

## f) PROVOKING FACTORS

1. Garments:

5 patients(5%) gave a history of wearing new synthetic garments prior to the onset of rash

2. Psychogenic Stress:

This was noted in 3 patients(3%). In 2 patients(2%) it was due to unemployment (male patients) and in 1 patient(1%) the cause was attributed to primary infertility (female patient.).

3. Pregnancy:

PR was noted in a woman who was in her 2nd trimester of pregnancy. The skin lesion showed no signs of aggravation and resolved spontaneously in 6 weeks.

4. Drugs:

None of the patient gave history of any drug intake prior to the onset of the rash.

5. Upper Respiratory tract infection:

In 4 patients (4%) the disease was preceded by upper respiratory tract infection.

## g) PRODROMAL ILLNESS

Prodromal illness like upper repiratory infection, malaise was seen in 4 patients(4%) in our study preceding the onset of the disease.

## h) HERALD PATCH

Herald patch was present in 57 cases and absent in 43 cases.

The following are the location of the Herald Patch,

| **Site of patch** | **No of patients** |
|---|---|
| Trunk | 47(Chest -42, Abdomen- 05) |
| Thigh | 04 |
| Shoulder | 02 |
| Arm | 02 |
| Back | 01 |
| Face | 01 |

Herald Patch was seen to occur more frequently over the trunk followed by the thigh.

The size of the herald patch varied from 2 to 5 cm in diameter. The largest sized herald patch was 5cm in diameter. The shape was Oval or round with peripheral collerette of scales in all the cases. The central area of the patch was light brown coloured and appeared wrinkled in majority of the cases.

**i) SECONDARY ERUPTION**

After a varying period, ranging from 1-2 weeks following the appearance of the Herald Patch, the generalised eruptions followed. They appeared in crops, intermittently at various intervals of 4-10 days. In most of the cases, it appeared on the trunk, upper thigh and arms, in a

swimming suit distribution. In 8 patients (8%), it was seen over the face and in 1 patient (1%) over the palms.

The secondary eruption followed the skin cleavage lines/langer's lines in all the cases.

## j) TYPES OF CLINICAL PRESENTATION

| **Types of Clinical presentation** | **Number of Patients** |
|---|---|
| Classic | 51 |
| Atypical | 49 |

In our study 51 patients (51%) had Classic PR. Patients were classified as classic if they had Herald Patch followed by secondary eruptions in a classical distribution following the Langer's lines. In 22 patients (22%) the Classical *CHRISTMAS TREE OR INVERTED FIR TREE PATTERN* was seen.

**ATYPICAL LESIONS**

Atypical Morphology:

| | |
|---|---|
| EMF like PR | 01 |
| Lichenoid PR | 01 |

Atypical Distribution:

| | |
|---|---|
| Inverse PR | 08 |
| Localised PR | 03 |

Atypical Size:

| | |
|---|---|
| Papular PR | 01 |

Atypical site:

| | |
|---|---|
| Face | 03 |
| Palm | 01 |
| Feet | 01 |

Atypical Presentation of Herald patch:

| | |
|---|---|
| Absent Herald Patch | 43 |
| Double Herald Patch | 01 |
| Only Herald patch , no sec. lesions | 02 |

49 Patients (49%) had atypical presentation, of which, 43 patients (43%) had no herald patch. 8 patients with inverse PR had lesions mainly over the extremities and 3 of them had lesion over face as well.

3 patients (3%) had localised PR, where the lesions were confined to one part of the body, of which 1 patient had lesions over dorsum of foot, another had lesions over the shoulder and other confined to the abdomen. 1 patient (1%) had lichenoid type of PR, where the lesions were raised violaceous papules seen over the trunk, upper limb

and thigh, and it was associated with severe itching .In 1 patient (1%) the lesions resembled

Erythema Multiforme (EMF) showing targetoid lesions, but on biopsy the lesion showed chronic dermatitis picture similar to PR. In 2 patients (2%), only herald patch was seen, without secondary eruption.

Vesicular, purpuric, urticarial, pustular, unilateral and gigantic forms were not seen in our study.

**k) ITCHING**

| **Grade** | **No of patients** |
|---|---|
| Absent | 9 |
| Mild | 86 |
| Moderate | 3 |
| Severe | 2 |

Itching was graded subjectively. Most patients had only mild itch. Among the two patients with severe itching, one had lichenoid type of PR.

**l) MUCOUS MEMBRANE LESIONS**

In our study none of the patients had lesions over the mucous membrane.

**m) NAIL CHANGES**

In our study none of the patients had nail changes associated with PR.

**n) RECURENCES**

Only 2 patients(2%) gave history of recurrence and in them, the lesions occurred in the same season of the year.

**o) COMPLICATIONS**

None of the patients had any complication.

**p) TOTAL DURATION OF THE DISEASE**

| **Total duration** | **No of patients** |
|---|---|
| 3-4 weeks | 18 |
| 5-6 weeks | 42 |
| 7-8 weeks | 37 |
| 9-12 weeks | 03 |

It was observed that lichenoid form of PR persisted for longer time, for nearly 12 weeks. In most of the patients (79%) the lesions resolved in 5-8 weeks.

**q) SEQUELAE**

In 93% of the patients the lesions resolved without leaving any residual hypo or hyperpigmentation. In 7% of the patients the lesions resolved leaving a residual hypopigmentation. None of the patients had hyperpigmentation.

**r) ASSOCIATED SKIN DISEASE**

| Associated skin disease | No of patients |
|---|---|
| Acne vulgaris | 01 |
| Aphthous Ulcer | 01 |
| Seborrhic Dermatitis | 06 |
| Keratolysis Punctata | 01 |
| Atopy | 05 |

**s) SYSTEMIC INVOLVEMENT**

No systemic abnormality was detected in any of the patients.

t) **BIOPSY**

Biopsy was done from the Herald patch, secondary eruptions and from atypical lesions like lichenoid and EMF like PR and also from rare clinical presentation like lesions over palms.

Histopathological examination of the Herald patch showed flaky hyperkeratosis, patchy parakeratosis, thinned out granular layer, irregular acanthosis, focal spongiosis, dilated blood vessels and sparse inflammatory infiltrate around blood vessels in upper dermis.

Histopathology of the secondary eruptions showed a similar picture to the Herald patch like flaky hyperkeratosis, patchy parakeratosis, thinned out granular layer in some areas, focal spongiosis, dilated blood vessels, and patchy inflammatory infiltrate around the blood vessels in upper dermis. Histopathological examination of one of the patient from the secondary lesions showed the scale lifting off from the epidermis.

Histopathology of lichenoid type of PR showed hyperkeratosis, prominent granular layer, dyskeratotic cell in the epidermis, increased

pigment basal layer, focal basal cell degeneration, pigment incontinence plenty of dilated blood vessels and dense inflammatory infiltrate of the upper dermis.

Histopathology of EMF- like PR showed flaky hyperkeratosis, patchy parakeratosis, irregular acanthosis, prominent granular layer, spongiosis, increased pigment basal layer, basal cell degeneration, and inflammatory infiltrate around the blood vessels seen in the upper dermis

Histopathology of lesions from the palm of one patient showed massive hyperkeratosis, stratum lucidum was seen, irregular acanthosis, spongiosis and sparse inflammatory infiltrate in the upper dermis.

Histopathological examination of from the lesion from the atypical case of PR showed flaky hyperkeratosis, massive irregular acanthosis (pseudo-epitheliomatous hyperplasia), vesicle formation, keratotic plugging, thinning of granular layer, basal cell degeneration, dilated blood vessels and extravasation of RBC's with sparse inflammatory infiltrate of the upper dermis.

**s) OTHER INVESTIGATIONS**

1. **Total leukocyte count:** 38 patients had leucocytosis over 11,000 cells/cu.mm.

2. **Differential WBC count:** Lymphocytosis was recorded in 25 patients and Eosinophilia in 18 patients with the Absolute Eosinophilic Count in the upper limit of normal range.

3. **ESR:** ESR was elevated in 15 cases with a maximum of 30mm/ hour.

4. **Haemoglobin**: Anaemia was noted in 26 patients, most of the them where females.

5. **Serum Total Protein:** was mildly elevated in 17 patients with slight increase in Albumin and Globulin.

6. **VDRL**: Serology test for Syphilis was non reactive in all the patients.

7. **Mantoux**: negative in all cases.

8. **Scraping for fungus** in KOH wet mount: All cases were negative.

9. **Culture of scales for bacteria**: no growth was observed.

**u) TREATMENT**

Reassurance was given to all patients by explaining to them the benign self limiting nature of the illness. All cases were treated symptomatically. Patients with mild itching and minimal scaling were treated with emollients and anti histaminic at night. Patients with moderate to severe itching was given emollients and anti histaminic at night along with a course of Tablet Erythromycin 250mg 4 times daily for 2 weeks.

Recalcitrant cases were treated with topical 0.1% Betamethasone ointment. All the patients were advised to use mild soap, soft loose clothing and to avoid irritants on the skin.

# DISCUSSION

PR is easy to diagnose clinically on the basis of the herald patch, followed by the appearance of generalised eruptions arranged with their long axis, parallel to the lines of cleavage of skin.

The incidence of PR in the present study of 100 cases was found to be 1.43%, which is similar to that reported in literature (0.3 to 3 %) [22]. The present study showed young adults (11-30 years) to be commonly affected, which is similar to that reported in literature [4]. Both sexes are equally susceptible according to some authors, while others quoted a female preponderance [9,20]. In our study, a male predominance was observed.

PR has been labelled as a seasonal dermatoses with a higher incidence in winter [22]. In our study, higher incidence has been similarly recorded in the winter and rainy seasons, from September to February. But sporadic cases were seen throughout the year.

Isolated instances of familial occurrence and case clustering have been seen in one study [33]. Only one patient reported familial occurrence in

the present study.

Literature states that wearing of new garments may precipitate or aggravate the disease [96]. In our study only 5 patients gave a history of wearing new garments prior to the onset of the disease. Other provoking factors like pregnancy (1%) and psychogenic stress (3%) were also recorded in the present study. Literature reports also indicate similar findings [47].

Prodromal illness like upper respiratory tract infection and malaise were seen in 4 patients (4%) ,similar to that seen in literature [96].

Literature reports herald patch to be seen in 80% of all PR patients[47], but in our study it was noted in 57% of patients .The location of the Herald patch has been seen to occur more frequently on the trunk followed by the thigh, which is similar to that reported in literature [2,96].

The herald patch which probably represented the primary inoculation site of the virus, according to various authors was seen to occur over the covered areas of the body [48].In our study also; the herald patch was seen to occur over the covered areas of the body in majority (95%) of the patients.

The generalised eruptions have been found to manifest in various morphological forms like papular, vesicular, lichenoid, EMF – like, purpuric, urticarial and pustular forms [60]. In our study only papular, lichenoid, EMF – like lesions have been observed.

Distribution of the secondary eruption over scalp, face and penis has been reported to be uncommon [10]. In our study, no scalp or penile lesions were seen, but 3 patients (3%) had lesions over the face. Involvement of palm is also uncommon and was seen in one patient (1%).

Literature states that mucous membrane involvement is rare in PR, but may involve the oral and genital mucosa[91,95]. In our study, mucous membrane involvement was not seen.

Localised PR which is an abortive form of the disease was observed in 3 patients (3%) in our study[67], in whom, the course of the disease was brief and the lesions disappeared with in 3 weeks in all of these patients.

According to literature, pruritus is mild in 25% of cases,50% mild to moderate and 25% had severe itching[51,96].In our study 86% of patients had mild itching,3% moderate and 2% had severe itching, one of whom

had lichenoid variety of PR.

As reported in literature, the majority of the cases had a self limiting course and the disease lasted for 6 weeks [53,96]. In our study, 79% of patients had a self limiting course of about 5-8 weeks. The longest duration of 12 weeks was observed in one patient who had lichenoid type of PR.

In most of the patients (93%) the lesions vanished without trace, which was similar to that in literature[4]. Postinflammatory hypopigmentation was seen in 7 patients (7%). However hyperpigmentation was not seen, like that reported in literature[4,96]

Though nail dystrophy had been seen by Silvers and Glickman, 1974, following Pityriasis Rosea, none of the patients in the present series showed any nail changes [75].

Literature reports that, PR is associated with skin diseases like Atopy, Sebborheic dermatitis and acne vulgaris[96].in our study also similar association have been found.

There was history of recurrence in 2 cases in our study. These findings are also consistent with those in literature where recurrence has

been seen in 2% of the cases [47].

No complication was seen in our study, similar to that in literature[96].

As reported in literature[2,81], the histopathological studies did not reveal any finding specific for Pityriasis Rosea. Findings like flaky hyperkeratosis, patchy parakeratosis, thinned out granular layer, irregular acanthosis, focal spongiosis, dilated blood vessels and sparse inflammatory infiltrate around blood vessels in upper dermis were seen which is similar to that reported in literature[2,81].

The herald patch and the secondary eruptions showed similar histopathological features, which is similar to that reported in literature [100].

In one of the patient extravasation of RBCs were seen in the upper dermis and in another patient dyskeratotic cells in epidermis was seen. These findings have been similar to that reported in the literature[2,81,82,83,84]. Keratotic plugging and pseudo epitheliomatous hyperplasia was seen in one patient but such finding has not been reported in literature. But multinucleated giant cells, which has been reported in literature was not seen in our study[82,83,84].

The present study did not reveal any evidence of balloon cell degeneration or vesicular degeneration, which is concurrent with the study done by Bunch and Tilley, 1961 [81].

Mantoux test was negative in all the patients. This also supports the present day hypothesis of viral etiology for PR, as mantoux is depressed in viral diseases.

Culture of scales for bacteria, showed no growth, which is similar to that reported in literature [24]. This excludes bacteria as a causative agent in PR.

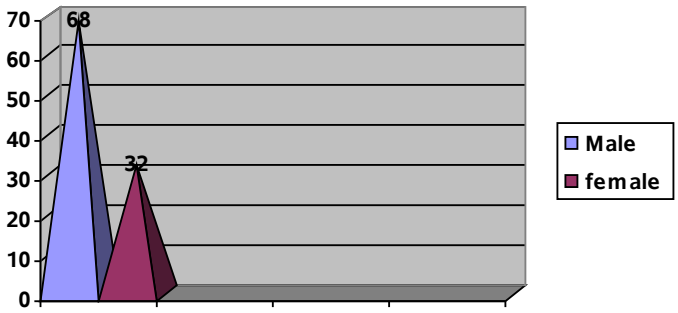
# SUMMARY AND CONCLUSION

In this clinical and etiopathological study on Pityriasis Rosea done in Department of Dermatology, Madras Medical College and Government General Hospital, Chennai the following points were observed

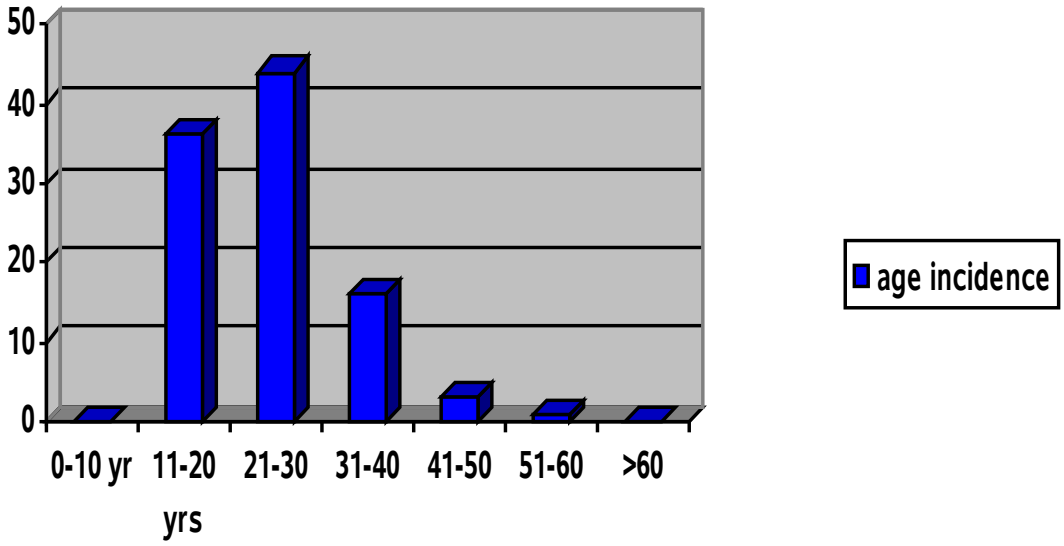
- Clinical diagnosis of Pityriasis Rosea was easy, based on the presence of Herald Patch, characteristic morphology and distribution pattern of the lesions.
- The present study has revealed male preponderance
- The age incidence was found to be high in adolescents and young adults
- Familial incidence was also observed
- The diseases was more frequent in the winter and rainy months with sporadic cases occurring throughout the year
- Factors like wearing of new garments, pregnancy, stress and upper respiratory tract infections were found to precipitate the disease
- The Herald Patch was observed to occur in the covered areas of the body, mostly over the trunk. The secondary eruptions had a wide spectrum of morphological forms with a variable distribution. Localised Pityriasis Rosea were also observed in this study

- Most of the patients had complete resolution of the lesions in 5 to 8 weeks but, lichenoid type of Pityriasis Rosea tends to persist for a longer duration.
- In most of the patients the lesions vanished without trace and post inflammatory hypopigmentation was noted in few patient, but none had hyperpigmentation.
- There was no complication in any of the patients.
- Recurrence of the disease was also observed
- Histopathological study showed the features of non specific chronic dermatitis.
- Culture of scales from the lesions did not show any bacterial growth .

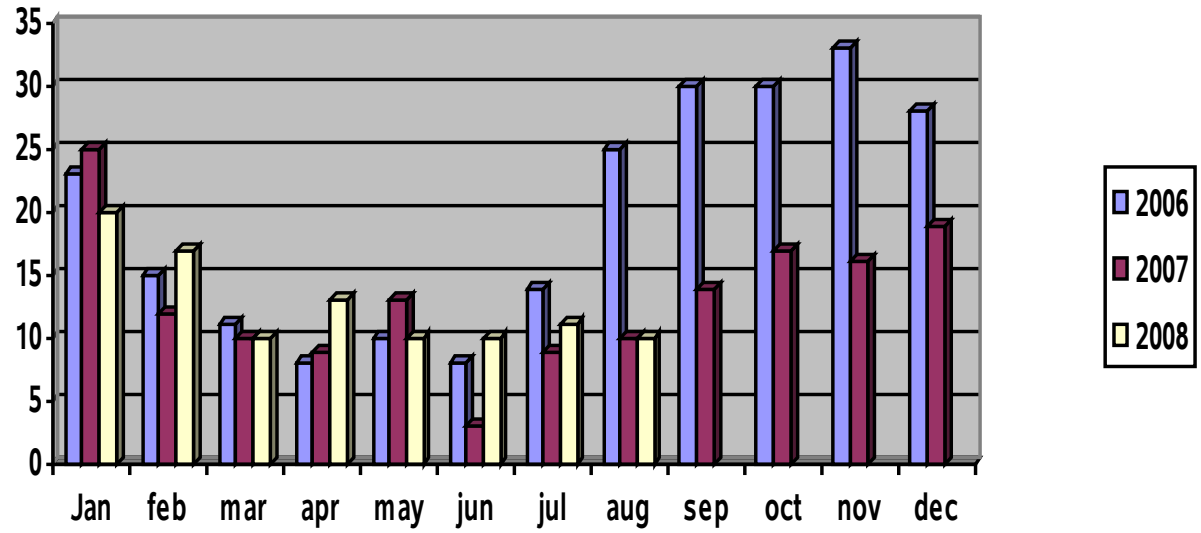
In conclusion most of the clinical and histopathological features were consistent with the findings reported in the literature.




**SEX INCIDENCE**




**AGE INCIDENCE**




**SEASONAL INCIDENCE**

## HERALD PATCH

## DOUBLE HERALD PATCH


## SECONDARY ERUPTIONS- CHRISTMAS TREE DISTRIBUTION


**PAPULAR PITYRIASIS ROSEA**

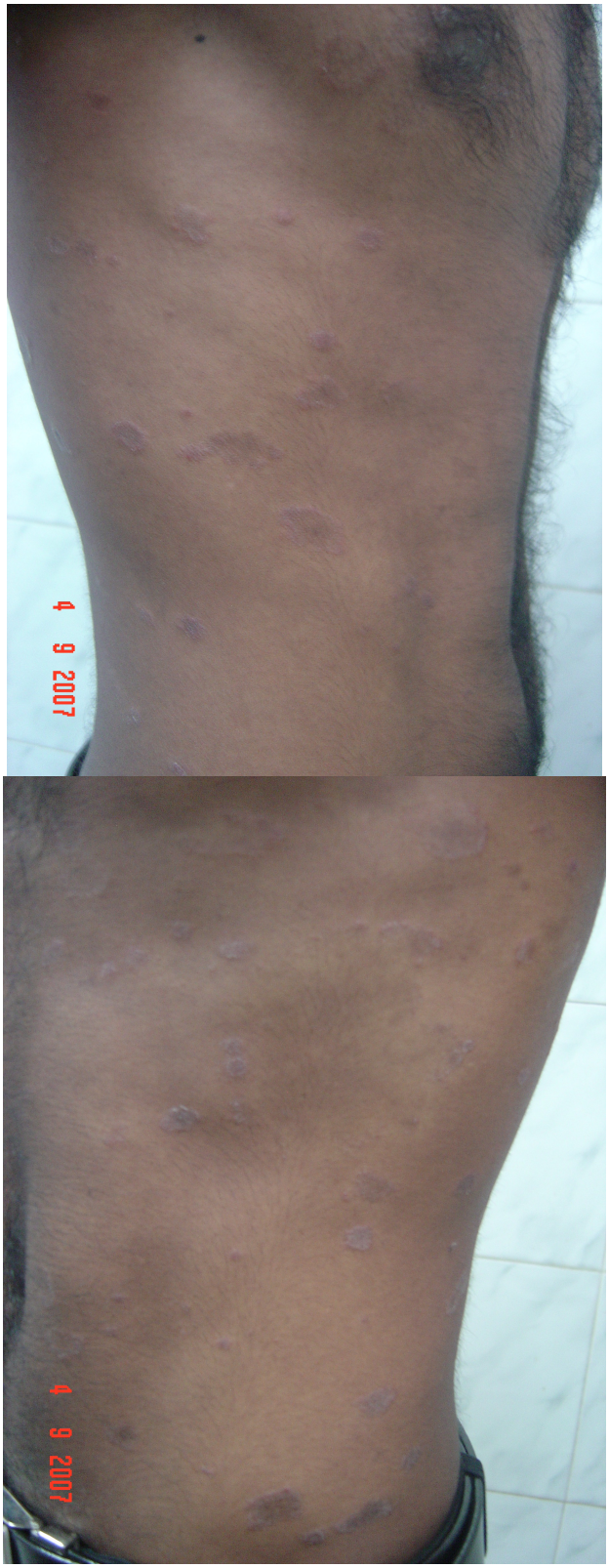
**EMF-LIKE PITYRIASIS ROSEA WITH INVOLVEMENT OF PALMS**

**INVERSE PITYRIASIS ROSEA**


**INVERSE PITYRIASIS ROSEA**

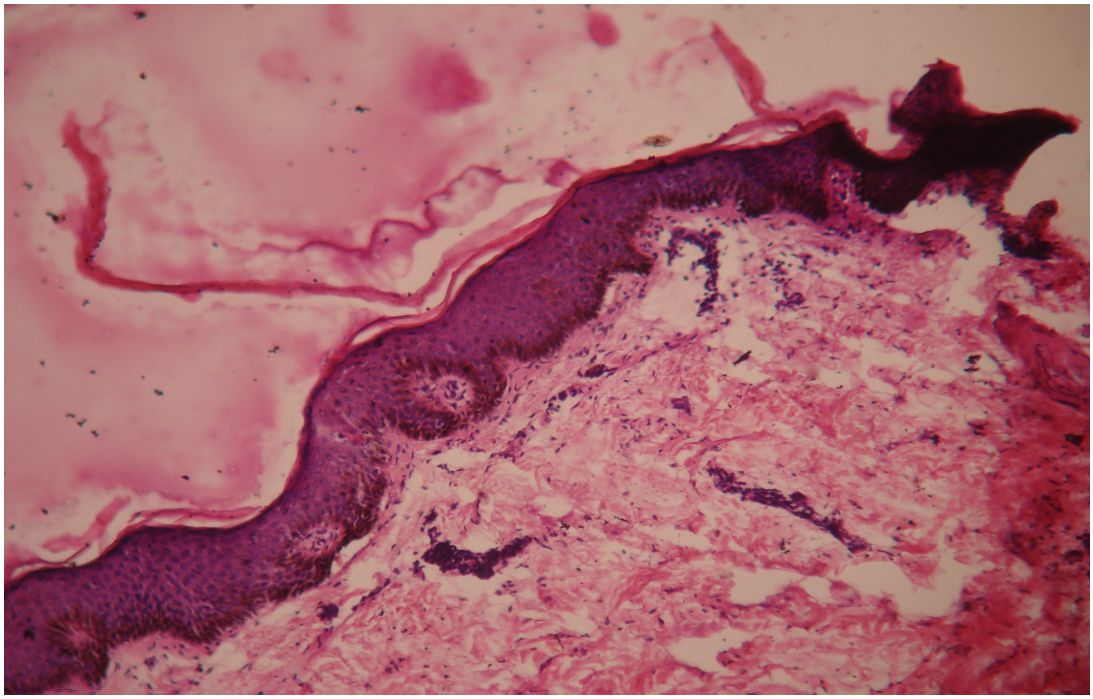
**LOCALISED PITYRIASIS ROSEA**

**LICHENOID PITYRIASIS ROSEA**

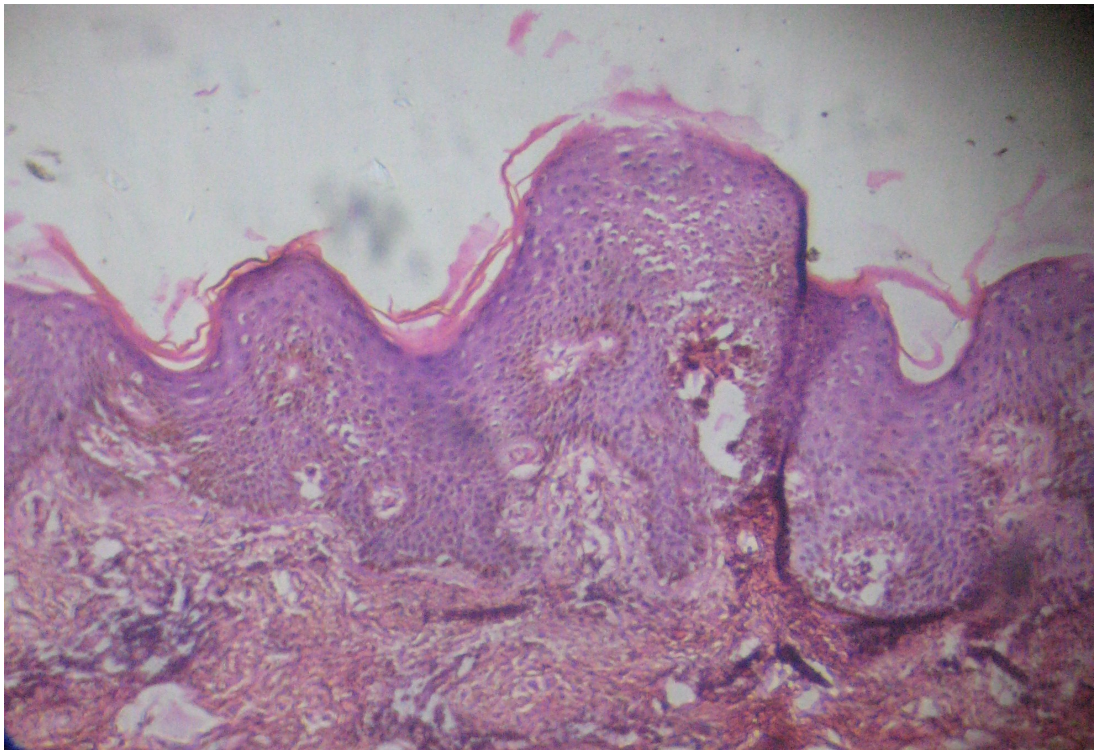



**PITYRIASIS ROSEA RESOLVED WITH HYPOPIGMENTATION**

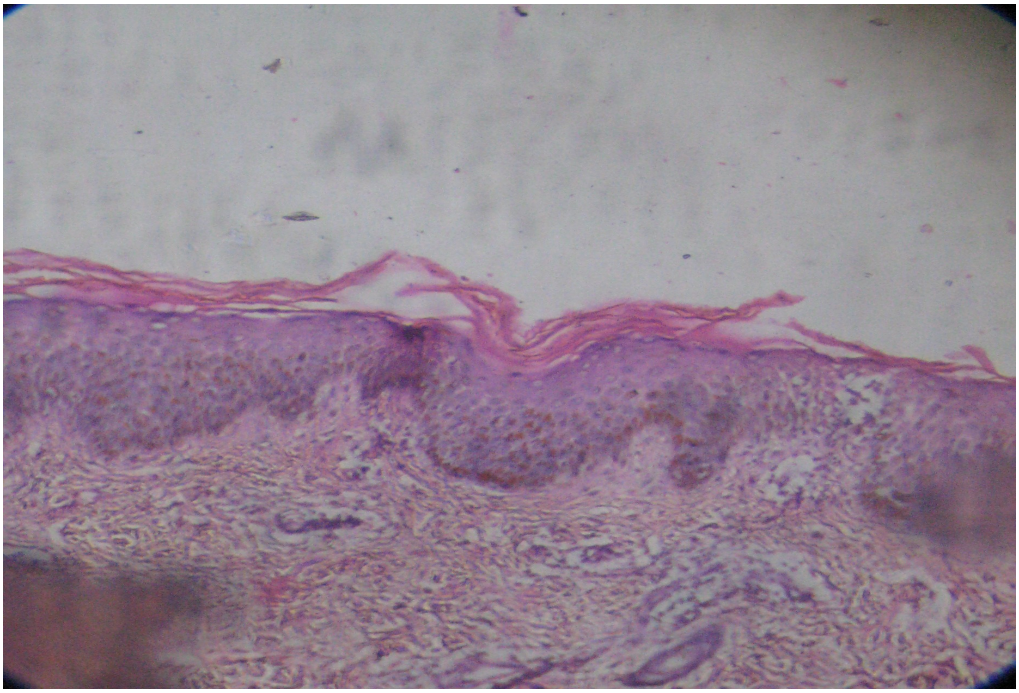
**HISTOPATHOLOGY OF HERALD PATCH SHOWING FLAKY HYPERKERATOSIS WITH SCALE LIFTING OFF THE EPIDERMIS,THINNING OF GRANULAR LAYER, SPONGIOSIS AND INFLAMMATORY INFILTRATE IN THE UPPER DERMIS**



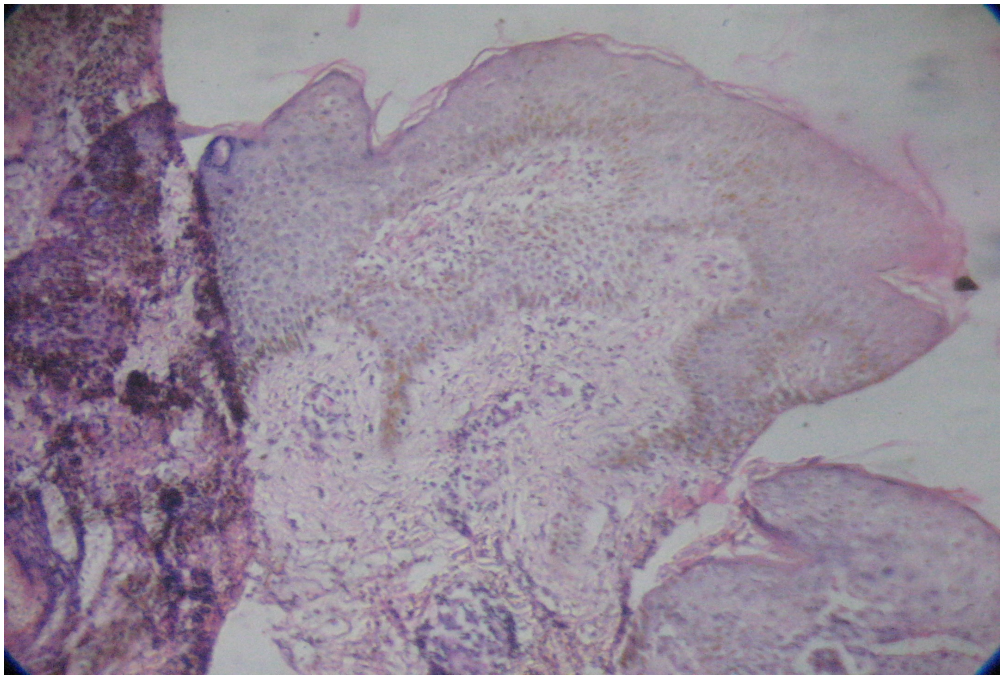
**HISTOPATHOLOGY OF HERALD PATCH SHOWING DYSKERATOTIC CELLS IN THE EPIDERMIS**



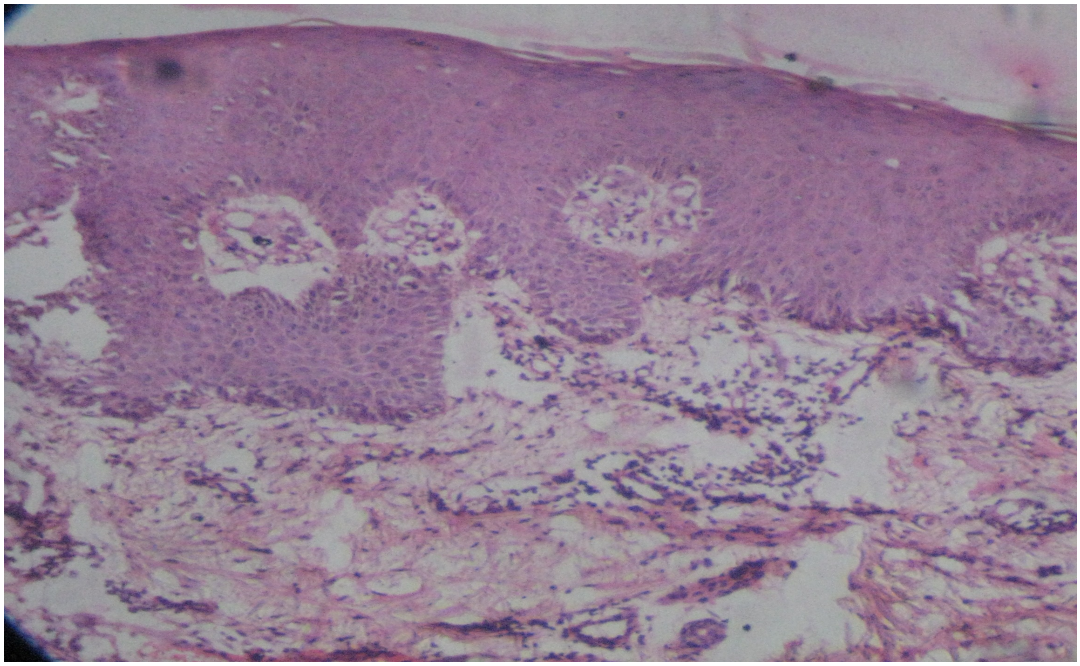
**HISTOPATHOLOGY OF SECONDARY ERUPTIONS SHOWING KERATOTIC PLUGGING, SPONGIOTIC VESICLE IN THE EPIDERMIS**



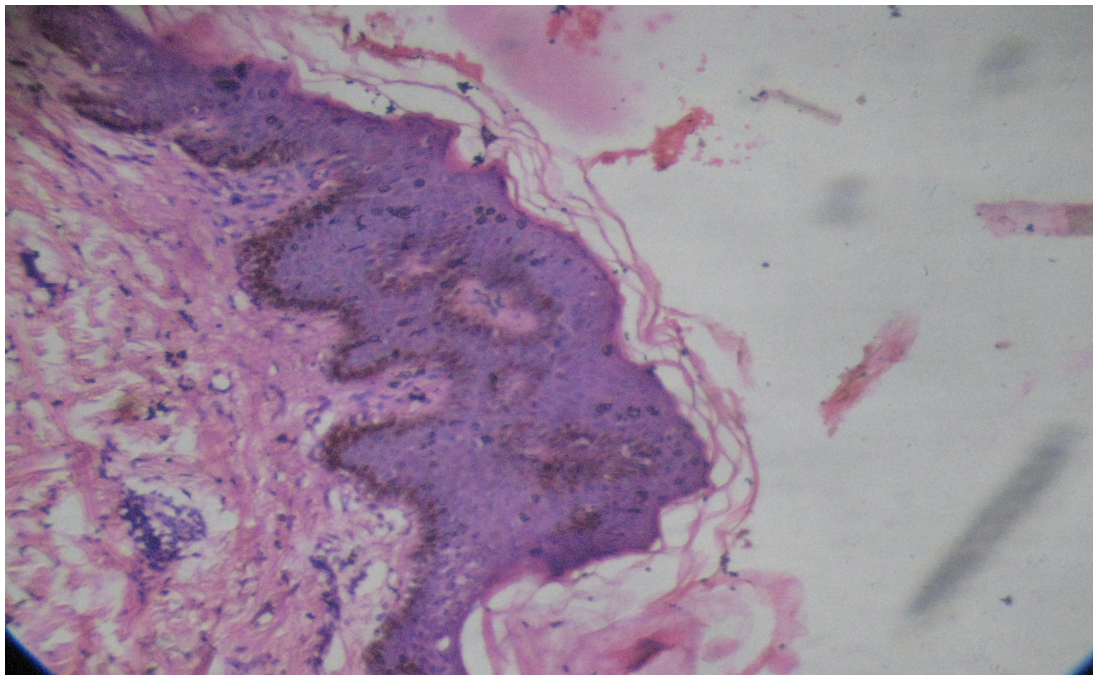
**HISTOPATHOLOGY OF SECONDARY ERUPTIONS SHOWING SPONGIOSUS , EXTRAVASATION OF RBCs,KERATOTIC PLUGGING**



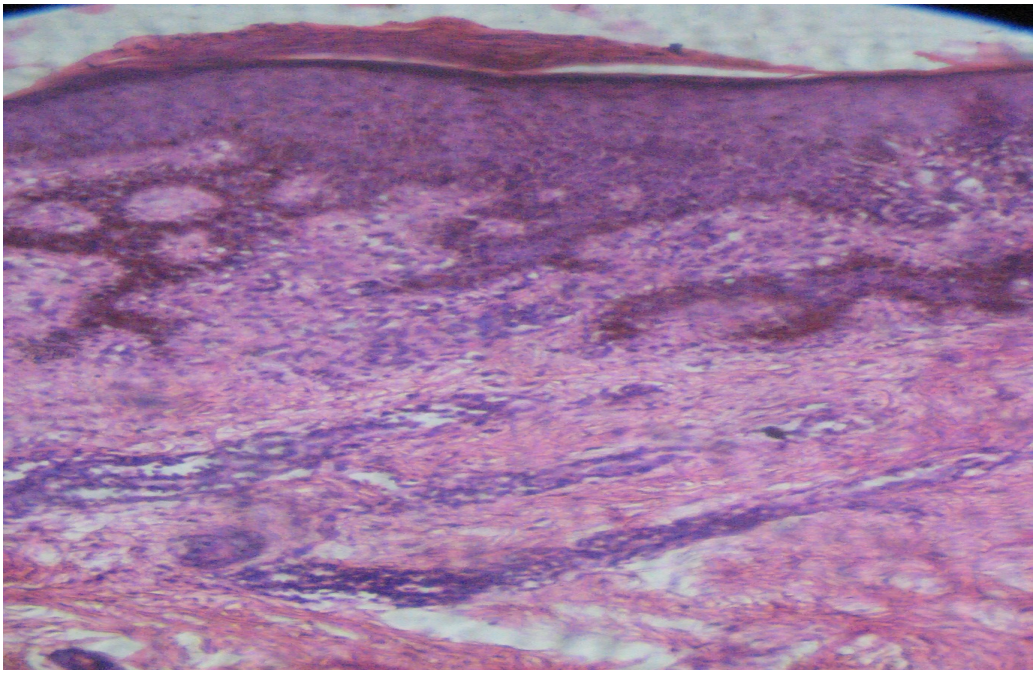
**HISTOPATHOLOGY OF SECONDARY ERUPTIONS SHOWING PATCHY PARAKERATOSIS,THINNING OF GRANULAR LAYER,SPONGIOSIS,DYSKERATOTIC CELLS IN THE EPIDERMIS ,DILATED BLOOD VESSELS AND INFLAMMATORY INFILTRATE AROUND BLOOD VESSELS IN UPPER DERMIS**



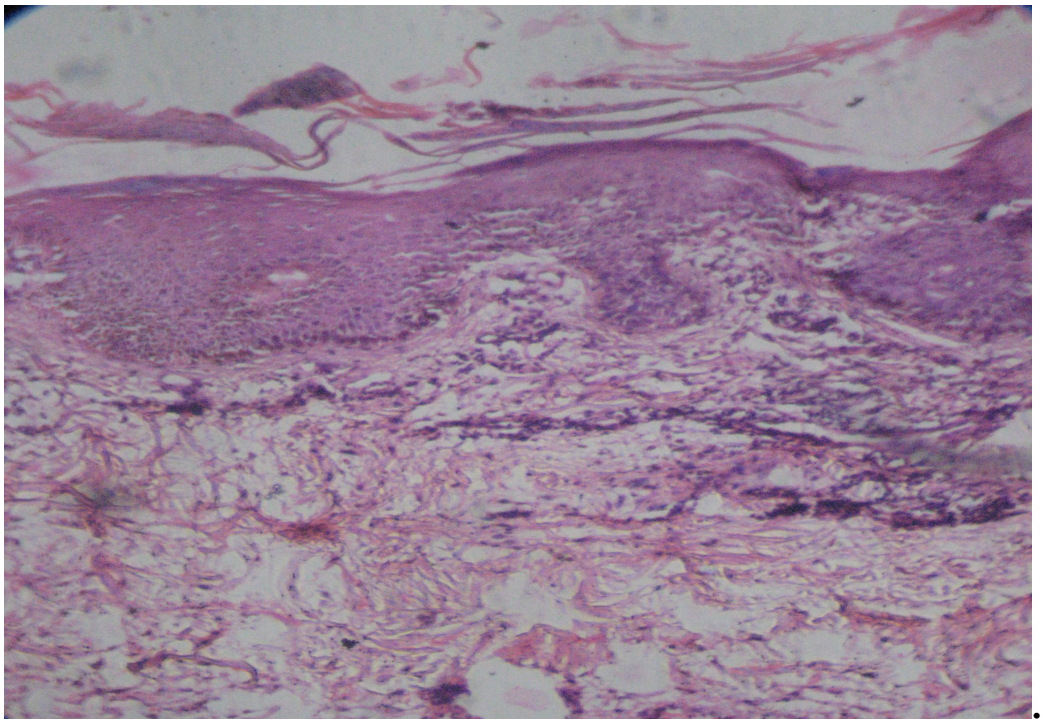
**HISTOPATHOLOGY OF SECONDARY ERUPTIONS SHOWING PSEUDOEPITHELIOMATOUS HYPERPLASIA**



**HISTOPATHOLOGY OF LICHENOID PITYRIASIS ROSEA SHOWING PATCHY PARAKERATOSIS, PROMINENT GRANULAR LAYER, IRREGULAR ACANTHOSIS,INCREASED PIGMENTATION OF BASAL LAYER , BASAL CELL DEGENERATION WITH PIGMENT INCONTINENCE AND INFLAMATORY INFILTRATE IN THE UPPER DERMIS**



**HISTOPATHOLOGY OF EMF LIKE PR SHOWING CHRONIC DERMATITIS PICTURE**



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# PROFORMA

**Case No.:** **Date:**

**Name:** **OP No:**

**Age:** **Occupation:**

**Sex:**

**History of:**

Prodromal Symptoms

Onset of skin lesion after prodrome – in days

Site of Herald patch

Duration between herald patch and generalised eruptions

Itching and its severity

Insect bite

Wasp sting

Small pox/BCG Vaccination

Hepatitis B Vaccination

Psychogenic stress

New garments

Exposure to venereal diseases

Contact with patients having similar illness

Atopy

Seasonal variation

Drug intake (Details of the drug and the condition for which it is taken)

Bone marrow transplantation

Pregnancy

**Past history :**

Similar episodes in the past - No of episodes

Site of Mother Patch during recurrence

**Family History :**

**EXAMINATION**

i. **General Examination :**

ii. **Systemic Examination**

R.S.

C.V.S

Abdomen

iii. **Dermatological Examination :**

Herald patch: Present or Absent

Site

Size

Shape

Characteristics of the lesion

Surrounding Skin

Duration

Generalised Eruptions: Morphological type

Distribution

Mucous membrane : (Oral cavity and vulva)

Nails

Complications & Sequlae – Clears with Hyperpigmentation

Hypopigmentation

Eczematisation

Lichenification

Associated Skin Diseases/ Conditions

**INVESTIGATIONS**

i. Blood TC
DC
ESR
Hb%
Serum Total Protein
Albumin
Globulin (α1 &α2)

ii. VDRL

iii. ELISA for HIV

iv. Mantoux

v. Scraping for Fungus

vi. Culture of scales for Bacteria

vii. Biopsy :

**TREATMENT**